‘A Very Costly Industry’:

the cost of Britain’s privatised railway

ABSTRACT

‘A Very Costly Industry’: the cost of Britain’s privatised railway

This paper is concerned with the financial performance of the British passenger rail industry since privatisation in the mid-1990s. This experiment, which not merely transferred a state-owned and fully integrated industry into the private sector, but dismantled it into over 100 separate entities, has generated considerable and highly critical academic literature. A major contention of this literature is that, contrary to the predictions of its proponents, privatisation has largely failed to improve efficiency and has actually increased costs, or more exactly, costs are higher than they would have been, had privatisation not taken place.

However, although various writers have put forward diverse arguments to support this position, robust data on the overall costs of the (now highly fragmented) industry have been lacking. Further, a proper assessment of the additional costs (or otherwise) of privatisation can only be made in light of ‘counterfactual’ estimates (necessarily speculative) of the costs of the state-run industry if privatisation had not occurred.

This paper aims to fill this literature gap by: (1) constructing a robust series of the overall operating costs of British passenger rail services since privatisation, (2) projecting, using reasonable assumptions, what operating costs would have been if privatisation not taken place, and (3) estimating the increase in such costs arising since privatisation.

The results, whilst they can only be broadly indicative, are nevertheless clear. Even after conservative assumptions, rail privatisation has resulted in considerable additional costs: it was a major public policy error.

Key words: privatisation, British, railways, costs

‘A Very Costly Industry’: the cost of Britain’s privatised railway

> ‘There is a mystery, is there not? We look at the net figures and it is £5bn going into the railways this year and everybody tells us their part of the system is ever more efficient and effective, yet the bottom line is £5bn.’
>
> Graham Stringer, MP, member of the House of Commons Transport Select Committee (TSC), 12 July 2006 (TSC, 2006, Q198).

1. Introduction

This paper is concerned with the financial performance of the British passenger rail industry since it was privatised in the mid-1990s. This experiment has generated a considerable academic literature, much of it highly critical. Proponents of privatisation predicted it would lead to greater efficiency, more responsiveness to passenger needs, and the elimination of state subsidy and direction. Many critics have argued that it has comprehensively failed to deliver, instead producing a structurally fragmented, operationally complex and financially dysfunctional industry. For example, state financial support, forecast to disappear as premium payments made by franchisees on profitable lines outweighed subsidies elsewhere (Crompton and Jupe, 2003a, p. 399), has actually grown from £2.93bn in 1994/95 to £5.28bn in 2013/14 (at 2013/14 prices – see ORR (2015a)). And, some critics argue, the major beneficiaries of this largesse ‘are not the passengers but the owners of the rail companies and the providers of capital [so that] as in all previous sales of state-owned industries, rail privatisation has been used to transfer wealth from the public to the private sector’ (Jupe and Crompton, 2006, p. 1062).

A major contention of the critical literature (reviewed below in Section 3) is that privatisation has failed to improve efficiency and has actually increased costs, or more exactly, costs are higher than they would have been, had privatisation not taken place.

However, although various writers have put forward diverse arguments to support this position, robust data on the overall costs of the (now highly fragmented) industry have been lacking. Further, a proper assessment of the additional costs (or otherwise) of privatisation can only be made in light of detailed ‘counterfactual’ estimates (necessarily speculative) of the costs of the state-run industry if

privatisation had not taken place, which as far as the authors are aware, has not been attempted until now.

This paper aims to shed light on this issue by:

1 Deriving robust data, from publicly available sources, on the overall operating costs of British passenger rail services, both before and after privatisation, so that the way in which these costs have varied over time (and in relation to the volume of traffic) can be more clearly understood;

2 Projecting, making reasonable assumptions, what these operating costs would have been in the period from 1996 to 2014 had privatisation not taken place; and so

3 Producing a reasonable estimate of the increase or decrease in such costs resulting from privatisation over that period.

The paper now proceeds as follows: Section 2 provides a brief outline of the background to privatisation, the restructuring of the railways this involved, and the major actors in the post-privatisation industry; Section 3 provides a review of the literature, concentrating on that which has argued that railway privatisation has led to increased costs; Section 4 gives an analysis of the operating costs of privatised passenger services compared with the counterfactual outcome if BR had been operating these services. Finally, Section 5 provides some conclusions.

2. The context

2.1 A problematic privatisation

Although a defining feature of the Conservative administrations of UK Prime Ministers Thatcher and Major (1979-97) was the transfer of state-owned companies and utilities to the private sector, there were initially grave reservations about privatising the railways. Margaret Thatcher was particularly mindful of 'the huge political risks' and 'nervous of the public reaction' (Parker, 2012, p. 449).

In the 1980s HM Treasury also showed a marked reluctance to embrace rail privatisation. The industry was regarded as a 'large and complex system with many joint costs and independence of different services [which] cannot be easily broken down into separate elements'. Many lines could not be profitable, but would have to

be subsidised for social reasons, rendering privatisation difficult if not infeasible (*op*. *cit*., pp. 445-6).

The railways also possess ‘several unique features’ which made privatisation particularly problematic. Although regarded as a ‘natural monopoly’ due to ‘the fixed costs of the network and the strength of the case for unified operation and vertical integration’, the railway industry was in a ‘competitive transport market’ and in decline, losing market share to road and air (Crompton and Jupe, 2003a, p. 398)

In particular, the industry has very high fixed costs: about half of all operating costs relate to the infrastructure (track, signalling and stations) varying little with the volume of traffic. This is also true of utilities such as gas or electricity, but whereas the latter ‘provide an (almost) universal and essential service’ (Shaoul, 2004, p. 30) and so can ‘spread fixed costs across many users’, in contrast, rail passenger services are ‘not universal and unavoidable’, and in the absence of adequate demand cannot fully recover these costs *(*Crompton and Jupe, *ibid*.). Full recovery from passengers would entail self-defeating fare increases that would ‘choke off demand’, inflict economic and social damage and be ‘politically unacceptable.’ Closure of subsidy-dependent lines would also have political and social consequences (Shaoul, 2002, p. 53).

When a commitment to privatise the railways was finally made by the Major government (in the Conservatives’ Election Manifesto in 1992) these problems were simply ignored. The subsequent White Paper, a slim document of 21 pages ‘rather lightweight’ on the economic rationale behind the privatisation plans (Preston, 1996, p. 2) blandly asserted that a privatised industry would ‘mean more competition, greater efficiency and a wider choice of services more closely tailored to what customers want’ and ‘provide greater opportunities to … reduce costs, without sacrificing quality’ (Department of Transport (DoT), 1992, pp. 1, 5). But evidence to support these assertions was distinctly lacking (Jupe and Crompton, 2006, p. 1037).

Apart from a general predisposition to assume that ‘private’ must mean better, the government had a number of objectives in privatising the railways: to eliminate or at least reduce public subsidy, to raise money from the sale of assets (Crompton and Jupe, 2003a, p. 399); to transfer decision-making and risk to the private sector [Transport Select Committee (TSC), 2006, para. 25]; and, although this was never

stated publicly, to weaken the position of the unions (Parker, 2012, p. 463) on the assumption that it 'would be easier to discipline the workforces of a fragmented industry' (Cole and Cooper, 2006, p.609).

However, once the decision in principle had been taken, the guiding idea or rationalisation was to introduce 'as much competition as possible' into the industry (Wolmar, 2005, p. 61; see also DoT, 1992, para. 25). This turned the exercise into the 'most complex' of the Thatcher/Major privatisations (Crompton and Jupe, 2003a, p. 398), involving the dismantling of a fully integrated state-owned corporation, British Rail (BR), into over 100 separate companies for sale to the private sector, an 'experiment in fragmenting a railway on a scale never contemplated anywhere else in the world before or since' (Parker 2012, p. 495).

2.2 The Privatisation Structure

The key players in the new fragmented industry were: an infrastructure company, initially Railtrack, but later replaced by Network Rail (NR); train operating companies (TOCs) which were awarded franchises to operate passenger services in particular areas; rolling stock companies (ROSCOs) which supplied locomotives and carriages to the TOCs; and freight operators (FOCs) (see Gourvish, 2002). These entities contract with each other to operate their segment of the industry: thus a TOC leases rolling stock from a ROSCO and pays Track Access Charges (TACs) to Railtrack/NR to use the infrastructure.

The complexity of the privatised industry led to a complex regulatory regime by three different agencies. The Office of the Rail Regulator (ORR) fixed the level of TACs levied by the infrastructure company. Another regulator, initially the Office of Passenger Rail Franchising (OPRAF), awarded franchises after competitive tenders and enforced consequent contracts. OPRAF was later absorbed by the Strategic Rail Authority (SRA)[1]. When the SRA was wound up[2] in 2006 its regulatory functions passed to the Department for Transport (DfT). Finally, Her Majesty's Railway Inspectorate, part of the Health and Safety Executive, had overall responsibility for issues of safety (Jupe and Crompton, 2006).

[1] Established under the Transport Act 2000 primarily to provide strategic direction for the railway industry.
[2] The SRA was wound up on 1st December 2006. See: The Railways (Abolition of the Strategic Rail Authority) Order 2006. http://www.legislation.gov.uk/uksi/2006/2925/pdfs/uksi_20062925_en.pdf

3. The Privatised Industry and its Costs

3.1 Framing the discussion: BR versus the privatised industry

A decade after privatisation, Gourvish (2008, p. 287) concluded that the government's assumption, that BR's costs 'were too high and could be reduced substantially by a private sector approach has proved to be erroneous'. Similarly the Official History of Privatisation (Parker, 2013, p. 319) notes that 'efficiency gains do not appear to have been extensive and costs have continued to rise. [Overall] results have been disappointing.'

Passenger traffic has greatly increased since the mid-1990s as shown in Figure 1 using several different metrics. More trains are running on what is substantively the same network; the growth in passenger traffic is greater, and the growth in passenger revenue greater still. Given the railways' high fixed costs, this might have been expected to lead to a fall in unit costs (defined here as the cost of carrying one passenger one km) as it did when BR's traffic increased in the 1980s (see Figure 5). However, this does not appear to have happened.

In his value-for-money study[3], Sir Roy McNulty (2011, pp. 18-19) notes the increase in passenger traffic but also points out that '[s]ince 1996/97 passenger rail industry expenditure [had] increased by £4bn (pa) or 60% … only part [of which could] be directly attributed to the increase in outputs'.

Lease charges for rolling stock had increased by £0.3bn pa reflecting 'the increase in train-kms and the number of vehicles leased'; train operating costs had increased by £1.7bn, of which £0.8bn related to increased activity levels (train-kms). In addition, infrastructure costs soared in the aftermath of the Hatfield crash, peaking in 2003/4, but subsequent cost-cutting removed £1.1bn pa by 2010. Reductions of 'between 1% and 3% per year in train operating costs and infrastructure operating and maintenance expenditure per passenger-km' had been 'largely offset [by] increases

[3] Commissioned by Lord Adonis, the Secretary of State for Transport in February 2010, to examine the 'overall cost structure of all elements of the railway sector and to identify options for improving value for money to passengers' (McNulty, 2011, p. 9).

in renewals and enhancement expenditure' (*ibid*.). However, the detailed basis of many of McNulty's cost estimates and efficiency savings are not always fully supported or explained.

Overall, unit costs showed 'little or no improvement' and actually increased on franchised services by 17% between 1996/97 and 2005/06, even 'after allowing for changes in service frequency and train length' (McNulty, 2011, pp. 29, 34). Similarly, the TSC (2013, pp. 9, 36) concludes that 'there has been no improvement from operating on a larger scale [since] train operating costs' had increased by £1.7bn between 1996 and 2008 'in tandem' with passenger traffic, while the Competition and Markets Authority (CMA, 2016, p. 60) highlights that 'only part' of the 'significant increase in passenger rail expenditure' since privatisation 'can be directly attributed' to increased traffic.

In his 'counterfactual paper', Jupe (2011) argues that privatisation was not inevitable by, for example, pointing to the untimely deaths of opponents such as Robert Adley (a Conservative MP and Chair of the TSC) and John Smith (Leader of the opposition Labour Party). He suggests (*op. cit*., pp. 337-8) that BR would have managed the increased passenger traffic with greater efficiency than the privatised system has achieved. Bowman *et al.* (2013, p. 135) argue that 'BR management by the 1980s was delivering exemplary operating efficiency [compared with European counterparts] despite being starved of investment'. In 1994, government subsidy was 15% of passenger revenues (compared to 29% in 2013) making BR 'the least subsidised railway system in Europe' whilst labour productivity (train-kilometres per employee) was the highest (Shaoul, 2004, p. 29; ORR, 2013, p. 7). BR's subsidy was 0.16% of GDP (against a European average of 0.52%) and BR has been described as 'perhaps the most financially successful railway in Europe' (Crompton and Jupe, 2003b, p. 619; see also Harris and Godward, 1997, p. 52; Shires *et al*., 1997, p. 1). It is plausible that BR would have further reduced its unit costs with the increase in traffic experienced in the last 20 years.

3.2 Railway Industry: Competition and Franchising

The purpose of separating infrastructure (track and stations) from the provision of passenger services, certainly on the part of the Treasury's Privatisation Unit and Sir

Christopher Foster (the Transport secretary's special advisor), was to enable competition between train operators. Indeed, the original idea was that TOCs would bid for the right to use particular train paths at particular times – analogous to the way in which landing/take-off slots can be bid for at airports (Shaw, 2000, p. 23; Gourvish, 2002, p. 390; Pollitt and Smith, 2002, p. 467; Wolmar, 2005, pp. 52-53; Parker, 2012, pp. 453-5).

A franchise system was embraced as the only means whereby competition, albeit periodic 'competition *for* the market as opposed to competition *in* it' could be sustained when the 'open access' model was abandoned as unworkable (Domberger and Jensen, 1997, p. 687). Franchises were kept short, typically seven years, to allow 'more frequent exposure to the market' (DoT, 1993, para. 14), and passenger rolling stock was transferred to the ROSCOs and then leased to train operators, who thus need little capital commitment, reducing barriers to entry.

3.3 The Train Operators

However, over time competitive pressures on incumbent TOCs have attenuated. McCartney and Stittle (2011, p. 2) argue that the 'cost and complexity of bidding for a franchise [constitute] significant barriers to entry' and McNulty (2011, pp. 63, 67) even cites these costs (about £20m per franchise awarded[4]) as a significant saving from his proposed lengthening of franchise periods (to 'at least 15 years').

Moreover, 'considerable emphasis [is] placed on past performance in the evaluation of bids, handicapping [new entrants]' (McCartney and Stittle, *ibid*.). The TSC (2006, para. 71) noted in 2006 that the franchise market had 'attracted very few entrants in recent years' and was an oligopoly: 'three large transport groups either own or hold more than 48% of [the] shares' in 14 franchise operators and 'most companies bidding for franchises are now either transport groups that entered the market around the time of privatisation[5] or overseas rail operators.' By 2014, 74% of private rail contracts were held 'by foreign [mainly French, German or Dutch] state owned/backed railways' (RMT, 2014). Taylor and Sloman (2012, p. 22) conclude

[4] About £3-£5m per bidder (typically three), plus £2-£5m start-up costs for the franchisee and £2.5m for the DfT (TSC, 2006, Para. 59; Ev. 69, para. 5.5).
[5] Gourvish (2008, p. 276) describes the retendering process as resembling 'the shuffling of a pack of cards'.

that ‘fragmentation and franchising of train services has resulted in little real competition’.

On the other hand Alastair Morton, Chair of the Shadow Strategic Rail Authority[6], argued as early as 1999 for 10-to-20 year franchises to give TOCs sufficient incentive to make long-term investments (Poole and Dyer, 1999, p. 16); similarly the TSC (2006, para. 90; 2009, paras. 18-19) has urged franchise periods of up to 15 years, with pre-defined break points at which the franchise could be withdrawn if specified targets had not been met. McNulty (2011, p. 63) argues that longer franchises would give TOCs more incentive ‘to innovate on services, make long-term investment [and] address difficult industrial relations challenges’.

These arguments have some force, but only if one forgets that short franchises were instituted precisely to ensure competition, the *alpha* of the industrial restructuring at privatisation. An oligopolistic train operator who is awarded a 25-year franchise, terminable early only if it fails to meet contractually-specified conditions, might be under *regulatory* pressure, depending on how aggressively the contract is policed, but is not facing any *competitive* pressure.

Since March 2013 there has been a ‘proliferation of Direct Awards’, where franchises have been extended without a competitive process: six such awards had been made by October 2014 (Butcher, 2015, p. 6) and a further four in the following year. The National Audit Office (NAO 2015, paras 3, 10) argues that Direct Awards are 'a sensible temporary measure [and the DfT] has contained risks to value for money from these non-competed contracts by limiting the number and duration, with most lasting between two and three years.' Yet the Treasury had originally wanted tendered franchises as short as three years to maximise competitive pressure, a plan only abandoned when it proved unacceptable to investors (see Jupe and Crompton, 2006, p. 1043; Parker, 2012, p. 471).

Other flaws in the structuring of the privatised industry as they affect the TOCs have been identified by researchers. Lease charges to the ROSCOs and TACs, which are both largely fixed, constitute most of their operating costs: the proportion they can

[6] The Shadow SRA was set up in 1999 prior to the Transport Act 2000 which officially created it (Gourvish, 2008, p. 42).

actually control is as low as 6-11% so they have 'little incentive to run a more efficient railway' (Taylor and Sloman, pp. 23, 59) and actually focus on revenue[7] (McNulty, 2011, p. 59).

Preston (1996, pp. 9-10) argues that the optimal railway network (i.e. which minimised operating costs) would be about 4,000km, running 120m train-km pa, implying that BR should have been broken up into no more than 'three or four network operators' which was 'the configuration of the industry prior to nationalization in 1947 and, in a different format [the way BR] was evolving through sectorization' in its final years. Inviting tenders for 25 passenger franchises[8] kept down the size and cost of individual franchises, encouraged tenderers to come forward, and helped make the privatisation a success, but pushed up overall costs (Crompton and Jupe, 2003b, p. 623; Jupe and Crompton, 2006, pp. 1040-2).

Furthermore, there is no effective transfer of risk from state to private sector, as there is 'little penalty associated with abandoning a franchise'(Taylor and Sloman, 2012, p. 38) and as Li and Stittle, (2014, p. 62) argue, the 'unique nature of the railway industry mean[s] that the state [is] never free of its ultimate responsibilities … TOCs are aware from experience that the Government (in order to avoid playing its role as the 'operator of last resort') will spend considerable time and effort, and even provide additional support, if a franchise runs into difficulty.' Indeed, TOCs were guaranteed additional support should actual passenger revenues fell below the levels specified in their franchise tender documents[9] (*ibid.,* pp. 47, 94).

TOCs are special purpose vehicles (SPVs), wholly-owned subsidiaries of the successful tenderer, created to operate a given franchise, which can be closed down without wider financial consequences. Franchisees are required to post performance bonds, forfeit if the contract is broken, but these are relatively small,

[7] Strangely, McNulty also notes that that the 'efficiency of the best performing [TOCs is] typically some 30% better than [that of] poorer performing companies' as if there were room for large efficiency gains by the latter. These differences must be due to the 'structural factors' mentioned earlier, such as the use of management ('cost plus') contracts in some franchises and the years 'remaining on a franchise' (*op. cit*., pp. 34-35).

[8] Initially, it was planned to have more, 'reflecting pressure from those who wanted to create a competitive railway', but investors required larger franchises (Parker, 2012, p.468).

[9] Bowman *et al*. (2013, pp. 93-4) note that in 2011/12, 'cap and collar' revenue support was claimed by 8 out of the 18 franchises, describing this as 'extraordinarily generous'. However, since 2012, the 'collar' support mechanism has been primarily related to exogenous factors such as changes in GDP.

and no deterrent to abandonment, especially if the TOC has committed to make substantial premium payments. Indeed, Bowman *et al.* (2013, p. 14) argue that the bidding process encourages 'predatory contractualism' where tenderers 'game the system with optimistic projections of passenger numbers and back loaded premium payments ... take easy profits in the early years and then walk away to avoid large premium payments'.

McCartney and Stittle (2011) offer a case study of this. Sea Containers won the East Coast Main Line franchise in 2005, undertaking to make premium payments (on a rising trend) of £1.9bn over ten years. Yet the TOC's balance sheet showed net assets of only £5.5m (GNER, 2006), and when it began to make losses, due to shortfalls in revenue, it surrendered the franchise in December 2006 and subsequently went into liquidation, with only a trivial impact on its parent undertaking.

The franchise was retendered, and awarded to National Express (August 2007), only for them to withdraw in July 2009 after incurring heavy losses. The then Minister of Transport, Lord Adonis riposted that it was 'unacceptable to reap the benefits of contracts when times are good, only to walk away from them when times become more challenging' but insisted this did not demonstrate any flaw in the franchising system, and six months later (in January 2010) declared that '[a]s a system, franchising is largely delivering well for both passengers and taxpayers' (McCartney and Stittle, 2011, p. 6; DfT, 2010, p. 5). But even he clearly felt something was amiss somewhere in the industry, since he commissioned Sir Roy McNulty's value-for-money study just a few weeks later. McNulty (2011, p. 34) noted, *inter alia*, that 'unit costs … of franchised services in Great Britain (after allowing for changes in service frequency and train length) increased by 17.1% between 1996/97 and 2005/06' and that TOCs' efficiency was poor compared with franchised services in some European counterparts.

The above discussion concerns only franchisee TOCs. The ORR can authorise 'access to the network on certain routes for a specified time' by Open Access Operators, who compete with the franchise operators but 'pay lower track charges' based on marginal costs. The CMA has argued that more widespread use of Open

Access Operators could provide 'a greater degree of competition 'in' the market [leading] to a reduction in costs' (2016, pp. 13, 20). However, historically, Open Access Operators have accounted for only a trivial proportion of passenger-mileage: just 0.7% in 2013/14 (ORR, 2015c) and so have been ignored for the purposes of this paper.

3.4 The ROSCOs

The rationale for vesting BR's passenger rolling stock with the ROSCOs was that the useful life of these assets (up to 40 years) was far longer than the franchises being tendered and, absent a functioning second-hand market, TOCs would be unwilling to invest in new rolling stock when they had no guarantee that franchises would be renewed. Three ROSCOs were established to create a competitive industry, and in theory, TOCs could purchase rolling stock or lease it elsewhere. Thus the ROSCOs were left unregulated and 'subject only to general competition law' (ORR, 1998a, Forward), despite being indirect beneficiaries of public subsidies *via* the TOCs. In practice, the ROSCOs, whose very existence is due to the way the railways were privatised, have been able to 'deliver exceptional returns to their investors, particularly so in the first few years after privatisation'[10] despite their very low level of risk' (McCartney and Stittle, 2012, pp. 155, 165). Rolling stock is 'highly non-substitutable' between franchises and there is virtually no surplus available. The TOCs have little leverage over the ROSCOs on charges, and generally treat them as a 'pass through' cost to the DfT (McNulty, 2011, pp. 235-6).

The government has now tacitly conceded that the rolling stock market is not functioning as originally intended i.e. a 'fully competitive market for the provision of new and second-hand rolling stock [with] no public sector intervention' (DoT, 1993, paras. 4, 19), and has become actively involved in procuring rolling stock e.g. for the next generation of Intercity[11] and Thameslink trains. Here the government has taken 'the lead' because of 'structural issues and the scale of the procurements' (NAO, 2014, p. 6), and assumed 'all the risk' of a £10.5bn contract: if passenger demand

[10] In 1997-99 the operating profits of the ROSCOs were equivalent to about 15% of overall passenger *revenue* (McCartney and Stittle, 2012, p. 162; ORR, 2006, p. 17).
[11] InterCity trains are express services, predominantly from London to major UK cities; Thameslink trains are suburban services through London.

forecasts prove incorrect 'taxpayers would have to cover the costs of any financial shortfall' (*op. cit.,* pp. 3-4).

3.5 Infrastructure holder

The railway infrastructure of track, signalling and stations, the vast bulk of BR's assets, were transferred on 1 April 1994 to a separate company, Railtrack, which was floated on the stock exchange two years later. It was set up, following recommendations from the consultants McKinsey, as an 'engineering-free corporation' (Gourvish, 2002, p. 402), which would buy in any necessary skills and expertise[12]. In fact it became, as the Rail Regulator himself put it, 'a less than competent client of its infrastructure contractors' (TSC, 2004b, Q.186), excessively dependent on consultants, on whom it spent at least £225 million in 2001/02, or almost 50 per cent of its wage bill' (Crompton and Jupe, 2007, p. 910). This was a striking contrast to the 'Big Four' railway companies in the inter-war years, whose engineers were the 'dominant management grouping' not the accountants as in much of British industry (Lawrenson, 1992, p. 46).

The directors of the newly-floated Railtrack 'did not did not hide the fact that its priorities were not those of the nationalised railway'. They aimed to generate returns to shareholders, who received generous dividends (£709 million between 1995/96 and 2000/01), and a rising share price (from 390p at flotation to a peak of 1768p). The directors 'incentivised' themselves with a profit-linked bonus scheme and share options worth £1.8m at the peak share price (McCartney and Stittle, 2015, pp. 115-6; see also Wolmar, 2005, pp. 92-5).

However, in practice the actual focus of the Railtrack's management was not on maintaining the infrastructure or controlling costs, but on extracting concessions from the Rail Regulator. Here Railtrack was spectacularly successful: e.g. the 40% increase in revenue from the 'breathtakingly generous' settlement for the control period[13] 2001-6 (Crompton and Jupe, 2003c, p. 15). But costs ballooned: Railtrack's investment projects, according to some experts, cost double or treble the amount BR would have paid; consultants commissioned by the ORR concluded that Railtrack

[12] Gourvish (2002, p. 440) acidly comments that there was 'more than a grain of truth' in the caricature of Railtrack operating like an absentee landlord 'who collects rents but undertakes no property services directly [merely employing] outside contractors … to undertake emergency repairs when tenants complain.'

[13] Control periods are five year funding and budgeting time periods.

had ‘no effective incentive to enhance and develop the network in an entrepreneurial manner’. It was spending more on the infrastructure than BR but presiding over ‘a decline in the underlying quality of the network’ (Crompton and Jupe, 2003a, p. 413). After Railtrack collapsed into administration in 2001, the Rail Regulator accused the company of having ‘had ... almost a policy, certainly latterly, of neglecting their assets’ (Shaoul, 2004, p. 34; see also Crompton and Jupe, 2007, p. 911; TSC, 2002, Q799).

The government then sponsored a new entity which took over the railway infrastructure in October 2002. NR is a company limited by guarantee: with no equity it is funded entirely by debt. This was highly controversial: it was widely asserted in the press and by the political opposition that NR was only set up as a technically private company so its debt could be excluded from government (Public Sector Net Debt) borrowing figures (McCartney and Stittle, 2006).

However, some have argued that the way NR is structured has had malign effects – and driven up costs. NR was unable to borrow without government support. The government was unwilling to give a formal guarantee, but let it be understood that the Strategic Rail Authority (SRA) would make a £7bn contingency fund available if necessary: much significance was invested in the distinction between ‘guarantee’ and ‘underwrite’. The result was that NR has had to pay a premium over government borrowing rates, incurring substantial additional costs[14].

Critics have also pointed to NR’s funding regime whereby the Rail Regulator fixes TACs for quinquennial periods with the result that NR’s incentive is merely to hold costs below the regulatory settlement’s limit, with ‘little pressure to work out the most cost-effective solution on particular projects’ (Crompton and Jupe, 2007, p. 922).

NR’s members meet infrequently and cannot control the directors: indeed a majority are appointed by the directors while others (e.g. TOCs) have special interests to pursue (Crompton and Jupe, 2007, p. 918; McCartney and Stittle, 2006, pp. 144-45). The TSC (2004a) concluded that the members were not ‘exercising an effective control of the company’ and that the ‘ownership structure is unacceptably weak’ (*op. cit.*, para. 59; Summary).

[14] Crompton and Jupe (2007, pp. 913, 920) estimate these at £30m in 2004/05 (2007, pp. 913, 920) while Lawlor (2011, p. 33) suggests £150m in 2009.

McNulty (2011, pp. 59-60) argues that without the need to generate a return for shareholders NR has 'weak incentives to tackle unit costs [and] only limited incentives to outperform regulatory targets and to minimise costs'. In contrast, the TOCs are fully compensated (under their franchise terms) for any increase in TACs, and so have no incentive to bargain with NR, which places insufficient priority on cost and tends to over-specify ('gold-plating')[15]. He also (*op. cit.*, p. 32) highlights 'an efficiency gap between NR and the top-performing European railways of between 34 and 40%'. The House of Commons Public Accounts Committee (PAC) has made similar criticisms and argued that 'private sector lenders [could not] provide the necessary discipline on the company to offset the extra cost of finance' (Jupe, 2012, p. 181; 2006, p. 150; PAC, 2005, p. 5). However, neither McNulty nor the PAC explain, or even ask, why Railtrack, driven precisely by the need to generate shareholder returns, proved such a failure.

Railtrack's collapse had been triggered by a serious accident at Hatfield in October 2000 which revealed the poor state of the infrastructure, and expenditure increased dramatically as NR rectified its predecessor's neglect. This peaked in 2003/4, but was then brought down and by 2011 had fallen to the same level as 1996/97. McNulty attributes this to the removal of 'a large part of post Hatfield cost increase' and NR largely achieving its target of a 30% cost reduction in Control Period 3 (2004-2009). He also draws attention to a sizeable reduction in renewals unit costs by 29% from its post-Hatfield peak, while conceding that 'efficiency improvements in track, in particular, have been difficult to achieve' (2011, p. 19). The ORR (2015b, pp. 3-4, 24) has also noted problems: NR missed '30 out of its 84 planned milestones in its Enhancements Delivery Plan' in 2014-15 and 'overspent its budget by around £230m'. Work on renewals was behind schedule and had 'cost 19% more than expected'. Overall, although NR 'is largely delivering on the plan's milestones, these are not improving train performance as much as predicted' (see also ORR, 2013).

[15] Malcolm Rifkind, McGregor's predecessor as Transport Secretary had rejected a separate track authority on the grounds that it would 'invest to maximise the quality of the rail infrastructure and simply pass on the costs either to train users or the taxpayer' (Parker, 2012, p. 451).

3.6 Industry Fragmentation

A number of writers have argued that the key flaw in the privatisation of the railways was the fragmentation of a hitherto integrated industry. In 2006, even Chris Grayling, then Conservative Shadow Transport Secretary, repudiated the original privatization model, acknowledging that the 'separation of track and train into separate businesses … has helped push up the cost of running the railways' (Jupe, 2011, p. 338).

Harris and Godward (1997, p. 107-10) argue that fragmentation has two deleterious effects. First, 'interface costs' arise due to the more complex supply chain e.g. rolling stock is supplied by a manufacturer to a ROSCO, which leases it to a TOC. Each actor requires a profit, driving up the overall cost. Second, there are 'cash leakages' as interest payments and dividends are extracted from the industry (Crompton and Jupe, 2003a, pp. 399-400; see also Crompton and Jupe, 2003b, pp. 628-30; Shaoul, 2004, p. 32; 2006, p. 157; Jupe and Crompton, 2006, p. 1052; Taylor and Sloman, 2012, pp. 17-21; Jupe and Funnell, 2015, p. 13).

The TSC's (1995, p. 172) forecast that these factors would add £715m pa to the industry's costs was rejected by the Department of Transport, but turned out to be 'a major underestimate in the light of the actual impact of privatisation' (Crompton and Jupe, 2003b, p. 630). Thus BR's interest charges were, in theory, available for re-investment in the industry (Shaoul, 2006, p. 157) and, in 1993/94, were only £121m; by 2000/01 dividend payments (mainly by the TOCs, ROSCOs and Railtrack) and interest charges (mostly by Railtrack) were £986m, and all extracted from the industry. Between 1995/1996 and 2002/2003 these 'leakages' amounted to £5.45bn, just over half the £10.7bn subsidy paid to TOCs in that period (Jupe and Crompton, 2006, pp. 1055-6).

After the collapse of Railtrack, Shaoul (2006, p. 157) saw the largest cash leakages coming from the ROSCOs; Taylor and Sloman, (2012) on the contrary, estimate that in 2009, dividends from TOCs (£227m) were larger than those of the ROSCOs (£207m); Jupe (2009, pp. 191, 200; see also Jupe, 2011) notes that interest on NR's

ever-larger borrowings more than doubled from £361m in 2002/03 to £822m in 2006/07 and by 2009 exceeded £1bn.

Crompton and Jupe (2003a) point out that the TACs and lease charges paid by train operators (and introduced by privatisation) 'represent over 90% of the revenue of Railtrack and the ROSCOs, respectively' and argue that that 'interface costs added at least £3 billion per year' to rail industry costs' (see Table 1).

Table 1

Key Costs (£m), nominal terms, (1996-2001)

Key Costs	1996/7	1997/8	1998/9	1999/2000	2000/1
TACS	2,165	2,149	2,169	2,175	2,089
Leasing charges	821	797	747	864	804
Total	**2,986**	**2,946**	**2,916**	**3,039**	**2,893**

Source: Crompton and Jupe (2003a, Table 1, p. 400).

These charges did not exist before privatisation since BR owned and maintained the infrastructure and built its own rolling stock, incurring substantial costs, even if significantly less than the above interface charges, which therefore cannot be treated simply as additional costs imposed by privatisation.

Shaoul (2006, p. 157), defining interface costs 'conservatively' as '5% of payments to the industry's suppliers at each level in the supply chain', plus leakages (interest and post-tax profit of the infrastructure holder, ROSCOs and train operators) produced an estimate of £800m pa. However, this would explain only a fraction of the increase in industry costs from £3.6bn in 1993/94 to a 'staggering' £7.4bn in 2003, an increase largely 'funded [by the public] via both taxes and fares' (*op. cit.,* p. 157).
Taylor and Sloman (*op*. *cit*., p. 7) estimate 'fragmentation costs' at £581m in 2009, made up of interface costs between the TOCs and NR (£290m), costs of NR outsourcing (£200m) and operating margins of TOC and ROSCO sub-contractors (£91m). Overall, their 'minimum' estimate the additional cost of the privatised railway, including only costs that can be 'most readily quantified' is about £1.2bn pa,

and cumulatively some £11bn up to 2010. Jupe and Funnell (2015, p. 14) claim that the industry's 'infrastructure costs have tripled since privatisation, with the key driver being substantial interface costs.'

McNulty (2011) focused on achieving economies within the existing industry structure and did not make comparisons with BR. Nevertheless, he also suggests that the fragmentation of the industry has driven up costs, due to misaligned strategies and incentives in different parts of the industry and misaligned and short-term planning and budgeting cycles, which represent a barrier to the whole system approach favoured by his study (although the obvious whole system approach – renationalisation – is curtly dismissed). McNulty repeatedly points to a fragmented structure as a cause of increased costs e.g. highlighting that

> industry relationships are based on contracts, for example between … train operators and NR … rather than partnerships [which] can lead to inflexibility and confrontation [and] slow and ineffective decision-making (2011, p. 49, 84, 284-6; see also Atkins Consultancy (2011) which is cited in support).

Ironically, replacing the integrated command structure of BR with 'contractual relationships between free-standing autonomous bodies' which would allow competition was precisely the economic rationale for the structure created by privatisation, as expounded by its 'chief architect', Sir Christopher Foster (2003, p. 6; see also Preston, 1999, p. 9).

Foster argues that 'modern management methods, accounting systems and computers' have nullified the advantages an integrated industry might have enjoyed in the past. But although he cites works by Ronald Coase and Oliver Williamson, he implies that the costs of fragmentation are largely administrative (e.g. sharing the revenue from through ticketing), which, if that is what he means, is a rather simplistic interpretation of Transaction Cost Economics (TCE). This argues that the arranging (and enforcing) of contracts between the autonomous actors in a free market imposes transaction costs: if these are burdensome then non-market co-ordination of some kind (e.g. vertical integration) may be more efficient. And more important than administrative or bureaucratic costs are the 'hazards of contracting' (Williamson, 2005, p. 8). Contractors behave in a self-interested, opportunist fashion, imposing costs on counterparties, while complex contracts are inevitably incomplete and require renegotiation, incurring further costs. Hazards are particularly severe when a party makes contract-specific investments whose value cannot be fully recovered

outside it (e.g. in bespoke equipment), and demands compensation for the risk thus undertaken, driving up overall costs.

McCartney and Stittle (2012) use TCE in their analysis of the ROSCOs, and it has been argued that it is key to understanding what has 'gone wrong': Tyrrall (2003, p. 38) even describes rail privatisation as a 'failed experiment in transaction cost economics.'

Similarly Li and Stittle (2014, p. 55), who use Agency Theory argue that franchises can be viewed as 'incomplete contracts [which] can also leave room for potential *ex post* opportunism and underinvestment [by TOCs] which are exacerbated in such a fragmented industry.' Cole and Cooper (2006) emphasise the lack of control consequent upon the fragmentation of the industry, and the loss of 'skills and tacit knowledge' as BR's employees were replaced by new entrants. Their primary concern is the impact of privatisation on safety, but their analysis obviously has a wider significance.

For proponents of privatisation, pointing to structural flaws has even become a means of explaining away its failures. David Howell, a Conservative Transport Secretary in the early 1980s, later blamed the Treasury for its 'insistence on pushing through a half-baked model of railway privatisation' (Parker, 2012, p. 499). A leading figure at the Institute of Economic Affairs[16] (and an academic) has argued that rail privatisation was:

> two experiments. The first was with private ownership … The second was the imposition of a particular vertically disintegrated structure … that could not easily be changed and that had never emerged before as an outcome of market processes (Booth, 2006, p. 15).

Academics such as Newbery (2006) and Parker (2006), firm supporters of privatisation in general, also criticise the resulting restructuring of the railways, with Parker (*op. cit.,* p.384) arguing that '[f]ew now defend the form of this privatisation and its resulting transaction costs.'

As Parker (2013) points out, many of the foregoing problems were clearly anticipated by ministers and civil servants while privatisation was still under discussion. Thus John McGregor, the transport secretary in 1992-94, admitted that privatisation was 'likely to impose additional costs on the Exchequer at least in the short-term';

[16] A prominent right-wing 'think-tank'.

similarly, the BR Board continued 'to harbour severe reservations about the precise form privatization was taking, believing that the fragmented railway would be …less effective and efficient'. Parker (*op. cit.* pp. 317-9) concludes that '[r]ail privatization in Britain was the product of hubris about the benefits of competition.'

Thus government ministers were not as sanguine about the beneficent impact of privatisation as they claimed, which may explain why they went to such lengths to manipulate the outcome of the privatisation to ensure its apparent success. *Inter alia*, responsibility for the upkeep of about 1,000 bridges (a liability with a present value of about £1bn) was quietly transferred from BR to local authorities; more than £1bn of BR's debt was written off; Railtrack was given a present of £707m of BR's tax losses (worth about £230m at prevailing tax rates) (see Harris & Godward, 1997, p. 132; Shaoul, 2004, p. 31; Crompton and Jupe, 2003, pp. 626-7; Parker, 2012, p. 487).

4. Analysis of cost data

4.1 The approach in this study

Generally, previous estimates of the additional costs of the privatised railway industry have been limited both in extent and depth.

Thus Crompton and Jupe have emphasised the additional costs of the TACs and the ROSCOs' leasing charges; Shaoul has pointed to the additional costs arising from the fragmented industries' interfaces and relates costs to the industry's revenue levels; Taylor and Sloman have made a (very conservative) estimate of the additional costs without providing a detailed breakdown; McNulty examines ways by which industry costs could be reduced, within the basic structure established by privatisation: longitudinal cost comparisons in the McNulty Report do not include the pre-privatisation period nor does it explicitly examine the extent to which additional costs have been caused by privatisation.

This study aims to analyse exactly this area, by producing estimates of overall annual operating costs for the (passenger-carrying) railway industry on a comparable basis from 1980/81 to 2013/14, using data from publicly available financial

statements. For this purpose 'operating costs' is taken to mean all costs other than finance charges. BR's accounts were prepared under a 'Direction' from the Secretary of State for Transport, which in the 1980s/90s required accounts as if BR were a private company, in line with accounting standards and giving a 'true and fair view' (BR, various years; McCartney and Stittle, 2015). The private limited companies that succeeded it all prepared accounts under UK GAAP before adopting International Standards in 2005 – but this change had only a minimal impact on the figures for operating costs. There is thus a high degree of consistency in the definition of 'operating costs' throughout the period being examined here.

4.2 The data sets utilised

The Nationalised Industry – to 1993/94

Operating costs of BR's rail activities from 1980/81 to 1993/94 are shown in Figure 2, extracted from its accounts, which permit a breakdown into Passenger Traffic and other sectors.

The Interregnum - 1994/95 to 1996/97

The process of privatisation was prolonged: the necessary restructuring of BR began in 1994/95 and the last franchise was awarded from February 1997 (Curwen, 1997, p. 56). Reliable cost information for this period proved very difficult to find due to the industry restructuring, so no cost figures have been estimated.

The Privatised Industry – from 1997/98

Aggregate annual financial information for the railway industry is available, but only from 2010/2011 (ORR, 2012). In principle, it should be sufficient to aggregate the operating costs of the TOCs from their published accounts, inasmuch as each TOC is a special purpose vehicle created to operate a given franchise by the successful tenderer, and the costs of other actors will pass through them[17]. Initially, there were 25 TOCs, one per franchise, albeit these were owned by only 13 different tenderers (Curwen, 1997, p. 56), but after some consolidation as the DfT reconfigured the

[17] A parent company may bear some costs e.g. directors' remuneration, but has no incentive to reduce the TOC's operating costs.

franchise map, the number had been reduced to 19 by 2013/14, with just 11 operators in various permutations (DfT, 2015).

The ORR receives monthly management accounts from each TOC, but this information is 'exempt from disclosure under s.44' of the Freedom of Information Act since the ORR is prohibited (under s.145 of the Railways Act, 1993) from publishing 'information about a business … that has been obtained in the exercise of (its) functions as an economic regulator.'[18].

This study has therefore extracted information from the publicly available financial statements of franchisee TOCs. The DfT (or earlier the SRA) has directly operated passenger services, where a franchise was revoked due to poor performance (e.g. Connex South East in 2003) or abandoned by the franchise-holder (e.g. the earlier-mentioned East Coast Main Line), but in these cases the operators were companies wholly-owned by the DfT and have been treated like other TOCs.

At first sight it would appear to be sufficient to aggregate the operating costs of the TOCs for the period of their franchises, but there are two complicating factors:

1 Government subsidies to the infrastructure holder (currently NR) mean that the latter may not recover all its costs through TACs. Indirectly subsidising passenger traffic in this way enables franchises to appear more profitable than they really are, and the privatised system a 'success' (Bowman, 2015). Such unrecharged operating costs of passenger rail services need to be added to the costs appearing in the TOCs' own accounts, but

2 The accounts of Railtrack/NR, unlike those of BR, do not clearly indicate a breakdown of costs between passenger and freight traffic. Whilst the former accounts for the majority of railway revenue and costs, the latter is still significant in absolute terms, and is supported by relatively heavy government subsidies, mostly paid to the infrastructure holder (McCartney and Stittle, 2013).

So to permit a tolerably accurate estimate of passenger operating costs, a computation has been made of overall industry costs (both passenger and freight) and an estimate of freight costs deducted from it.

This computation can be represented as:

[18] In response to the authors' FOI request: FOI/13-14/153 on 28 November 2013.

IND = PASS + FR + INFR - TACP - TACF

Where:

IND = Industry operating costs
PASS = Operating costs of Passenger TOCs
FR = Operating costs of Freight Operating Companies (FOCs)[19]
INFR = Operating costs of infrastructure holder (Railtrack/NR)
TACP = TACs paid by TOCs
TACF = TACs paid by FOCs

These costs have been extracted from the published financial statements of the entities concerned, and involved examination of nearly 600 sets of financial statements filed at Companies House.

Freight operating costs

As explained, the operating costs of the privatised freight industry cannot be directly computed from published financial information. Instead, real unit costs have been calculated from BR's financial statements (see Figure 3) and a conservative estimate of £0.10 per tonne/km (at 2013/14 prices) based thereon has been applied to post-privatisation freight volumes. In other words, the privatised freight industry is assumed to make zero efficiency gains between 1994/95 and 2013/14. This may overestimate freight industry costs – and so lead to an underestimate of passenger costs.

The resulting overall passenger traffic costs are shown in Table 2 and Figure 4, along with the volume of traffic (in passenger-kms).

[19] The DfT does not insist that FOCs be dedicated SPVs but the scale of their other activities is relatively small, so including their overall costs does significantly distort the results.

Table 2: Operating costs of the privatised industry, 1997/98 to 2013/14

	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8	Col 9	Col 10
	Operating costs at nominal prices						Op costs at 13/14 prices			Traffic
Year	TOCs	FOCs	RT/NR	TACs	FACs	Industry	Industry	Freight	Pass'gs	Pass/kms
	£m	£m	£m	£m	£m	£m	£m	£m	£m	(bns)
1997/98	4,898	686	2,083	(2,149)	(164)	5,354	8,487	(1,690)	6,797	34.7
1998/99	4,940	670	2,097	(2,169)	(169)	5,369	8,254	(1,734)	6,520	36.3
1999/00	4,941	748	2,179	(2,175)	(158)	5,535	8,376	(1,823)	6,553	38.5
2000/01	5,027	750	2,344	(2,089)	(162)	5,871	8,627	(1,809)	6,818	38.2
2001/02	5,305	766	3,990	(1,633)	(86)	8,342	12,077	(1,939)	10,138	39.1
2002/03	5,615	810	2,885	(800)	(35)	8,475	12,018	(1,852)	10,166	39.7
2003/04	6,187	937	3,364	(1,899)	(68)	8,521	11,756	(1,887)	9,869	40.9
2004/05	6,423	882	3,393	(1,435)	(73)	9,191	12,296	(2,035)	10,261	41.7
2005/06	6,606	890	3,369	(1,515)	(97)	9,252	12,061	(2,170)	9,891	43.1
2006/07	7,466	837	3,517	(2,206)	(95)	9,519	11,962	(2,188)	9,774	46.2
2007/08	7,920	836	3,548	(2,309)	(90)	9,905	11,953	(2,118)	9,835	48.9
2008/09	8,055	879	3,616	(1,533)	(93)	10,924	12,804	(2,063)	10,741	50.6
2009/10	7,667	835	3,687	(1,823)	(52)	10,314	12,033	(1,906)	10,127	51.4
2010/11	7,566	840	3,684	(1,916)	(43)	10,131	11,261	(1,923)	9,338	54.5
2011/12	7,679	873	3,667	(1,961)	(51)	10,207	10,826	(2,106)	8,720	57.3
2012/13	8,266	926	4,026	(2,113)	(48)	11,057	11,376	(2,146)	9,230	58.4
2013/14	8,677	991	4,021	(1,994)	(52)	11,643	11,643	(2,271)	9,372	60.1
							TOTAL		154,126	

Notes: Col 6 = Col 1 + Col 2 + Col 3 – Col 4 – Col 5
Col 7 = Col 6 up-rated to 2013/14 prices by RPI
Col 9 = Col 7 – Col 8.

Sources: Cols 1-5 – Published accounts of the TOCs, FOCs and RT/NR; Col 8 – statistics of freight moved (ORR, 2015c) at deemed rate of £0.10 per tonne/km (see Figure 3); Col 10 – ORR, 2015c.

4.3 The counter-factual – privatisation never happened

The ‘counter-factual’ here is an estimate of what operating costs would have been had BR not been privatised. Figure 5 shows BR’s unit passenger operating costs alongside traffic volume (passenger/kms) from 1980/81 to 1993/94. As would be expected, unit costs tend to fall when traffic volumes rise and *vice versa*, but over the whole period, unit costs fall from 21.4ppp km (pence per passenger/km) in 1980/81 to 17ppp km in 1993/94. Thus, although traffic is virtually identical in those two years (about 30bn passenger/kms), BR managed to reduce unit costs by 1.8% pa over that period.

It is of course impossible to be certain how BR would have performed after the mid-1990s had privatisation not taken place. However, based on its record in the 1980s, it would seem highly likely that with the great increase in traffic experienced after the mid-1990s, BR would have been able to reduce unit costs even more rapidly, although by how much must be a matter of conjecture.

Table 3 shows actual costs from Table 2 together with projections of BR costs assuming: constant real unit costs at 1993/94 levels; and reductions in unit costs of 1% pa and 2% pa.

Table 3 – Projected passenger rail costs of a continuing BR (1993/94 to 2013/14)

Year	Traffic	BR costs (£m) assuming unit costs			Actual (£m)
	pass/kms (bns)	decrease by 2% pa	decrease by 1% pa	are stable at 1993/94 level	
1993/94	*30.4*	*5,168*	*5,168*	*5,168*	
1994/95	*28.7*	*4,781*	*4,830*	*4,879*	
1995/96	*30.0*	*4,898*	*4,999*	*5,100*	
1996/97	*32.1*	*5,136*	*5,295*	*5,457*	
1997/98	34.7	5,441	5,667	5,899	6,797
1998/99	36.3	5,578	5,869	6,171	6,520
1999/00	38.5	5,798	6,162	6,545	6,553
2000/01	38.2	5,638	6,053	6,494	6,818
2001/02	39.1	5,655	6,133	6,647	10,138
2002/03	39.7	5,627	6,165	6,749	10,166
2003/04	40.9	5,681	6,288	6,953	9,869
2004/05	41.7	5,676	6,347	7,089	10,261
2005/06	43.1	5,750	6,495	7,327	9,891
2006/07	46.2	6,040	6,892	7,854	9,774
2007/08	48.9	6,265	7,222	8,313	9,835
2008/09	50.6	6,353	7,398	8,602	10,741
2009/10	51.4	6,325	7,440	8,738	10,127
2010/11	54.5	6,572	7,810	9,265	9,338
2011/12	57.3	6,771	8,129	9,741	8,720
2012/13	58.4	6,763	8,202	9,928	9,230
2013/14	60.1	6,821	8,357	10,217	9,372

Note: the 'base case' for the above is the estimate that BR's unit operating costs in 1993/94 were £0.17 per passenger/km (at 2013/14 prices – see Figure 3). Traffic figures: ORR (2015c). Actual costs from Table 2.

Table 3 shows these projections of BR costs together with actual industry costs from Table 2. These suggest that the privatised industry is now outperforming the hypothetical BR – but only after 2010/11, and only if it is assumed that BR would have made no improvement in efficiency after 1993/94.

On each of the three scenarios posited in Table 3, the privatised industry has cost more, over the whole period from 1997/98 to 2013/14, as shown in Table 4.

Table 4: Additional operating costs of the privatised industry for the period, 1997/98 to 2013/14 inclusive (in 2013/14 prices)

BR's assumed real unit costs	**BR costs (97/98 to 13/14)**	**Actual costs (97/98 to 13/14)**	**Additional cumulative costs**	**Additional annual costs**
	£m	**£m**	**£m**	**£m**
Reduces 2%pa	102,754	154,126	51,372	3,022
Reduces 1%pa	116,629	154,126	37,497	2,206
At 1993/94 levels	132,532	154,126	21,594	1,270

The above figures imply that one could only argue that privatisation reduced costs by assuming a serious deterioration in BR's hypothetical performance, namely real unit costs more than 16% higher between 1997/98 and 2013/14 than they had been in 1993/94.

Also evident from Table 2 and Figure 4 is the sharp rise in operating costs in 2001/02, an apparent consequence of the Hatfield derailment in October 2000, as Railtrack's neglect of the infrastructure was rectified. Industry costs peaked in 2008/09 but then began to fall, largely due to cost reduction by NR (see Section 3.5 above). Ironically, from the figures calculated for this paper, industry operating costs bottomed out in 2011/12 – just when McNulty's report was published.

5. Discussion and Conclusion

5.1 Overall rail passenger operating costs 1997/98 to 2013/14

The railways have very high fixed costs and one might have expected that the expansion of passenger traffic from the mid-1990s would have reduced unit costs and even created a profitable industry without need of public subsidy.

But, as the literature critical of rail privatisation has highlighted, this has not happened: costs and subsidy have both increased. Privatisation has inflated costs: more exactly, given the volume of passenger traffic, the privatised industry has incurred higher costs than would have been incurred by BR.

However, whilst the critical literature reviewed in Section 3 has proffered a variety of estimates of, and explanations for cost inflation, it lacks a robust empirical case demonstrating the scale of the additional costs generated by privatisation.

The purpose of this paper has been to test and quantify this assertion, on a tolerably reliable basis, for the period from 1997/98 to 2013/14 by: (i) establishing actual costs of the industry using data from published financial statements and, (ii) estimating what the costs of BR would have been had privatisation not taken place, by making plausible assumptions about BR's unit costs in that 'counter-factual' scenario.

In his report McNulty (2011, p. 43) comments that:

> [M]aking any such estimate of savings inevitably requires significant simplification and judgement. The results should therefore be interpreted only as broadly indicative of the financial value that could be released through the implementation of the Study's proposals.

Similar caveats apply with the present work, particularly given the access and restrictions to some information from industry bodies (such as the ORR), but the authors similarly argue that their results are 'broadly indicative' of the additional costs imposed by privatisation.

The present work suggests that these costs have been enormous. The problems revealed by the Hatfield crash drove costs, already higher than those of BR, to extraordinary levels. The quasi-nationalised NR, despite its flawed structure, has managed to bring infrastructure costs under control, but real unit costs have only fallen below pre-privatisation levels from 2011/12 onwards.

Even if one assumed BR to have made no efficiency gains at all i.e. its unit costs in 2013/14 are the same as in 1993/94, the additional aggregate costs amount to £21.6bn (at 2013/14 prices) over the period from 1997/98 to 2013/14. One has to posit a serious deterioration in BR's efficiency in order to eliminate its relative cost advantage over that 17-year period. BR actually achieved a reduction in real unit costs of 1.8% pa in its last 14 years although traffic was virtually unchanged. Given the very high fixed costs of the railways and the growth in passenger traffic after the mid-1990s, it would be plausible to argue that BR would have achieved an even more rapid reduction in unit costs: even the most favourable (to BR) assumption of a 2% pa reduction in Table 3 may be somewhat conservative.

5.2 Finance costs and Freight

The figures estimated above refer only to the operating costs of the privatised industry/BR, ignoring finance costs. Yet as Table 5 shows, the debt and finance costs of NR alone dwarf those of BR, and NR's interest of £1.53bn in 2013/14 is equivalent to 16% of total industry operating costs.

Table 5 Debt and Interest of BR and NR

	BR in 1993/94		NR in 2013/14
	Nominal	At 2013/14 prices	
	£m	£m	£m
Debt at year end	2,484	4,388	32,987
Interest charges	121	215	1,530

Sources: Crompton and Jupe, 2003, p. 401; BR, 1994, NR, 2014, pp. 115, 125.

From 1 September 2014, NR was re-classified by the Office of National Statistics as a Central Government body in the UK National Accounts (Joloza, 2013) and its debt now appears 'on the government's balance sheet' (Hansard, 2013). From 4 July 2014, new debt, or the refinancing of existing debt, is arranged through the DfT, but NR is still paying a premium over government rates on pre-existing debt. Moreover,

Stephen Glaister, Chair of the ORR, has recently (June 2016) admitted that NR's debt[20], now around £40bn, is 'never going to be repaid', so whilst it has historically been described as 'financing' it is, in fact, 'funding' (Modern Railways, 2016, p. 6). In other words, much of it will be written off in NR's books and assumed by the state – it is effectively subsidy and, in practice, NR's costs are correspondingly higher than in the above analysis.

FOCs pay TACS based on marginal costs only on most routes, implying a cross-subsidy from the TOCs whose charges are based on 'full-cost'. However, FOCS only pay a fraction of these marginal costs: in 2010/11 these were estimated at £200-250m but actual TACS paid were only £43m (McCartney and Stittle, 2013, p. 326). Yet in that same year industry operating costs were estimated, by projecting forward from costs disclosed in the accounts of BR, at £1,730m, whilst the FOCs' operating costs were £840m (both at 2010/11 prices) implying a cross-subsidy from the TOCs, of about £640-690m pa, a cost imposed on the passenger rail sector which does not appear in this analysis.

5.3 Cost Structure

As noted above, this paper's estimates of the extent to which privatisation has increased the overall costs of operating rail passenger services (although based on published accounting data and plausible, even conservative assumptions), can only be taken as 'broadly indicative'. By the same token, these projections do not explain why this might have happened.

An attempt to provide an explanation might begin by looking into the composition of operating costs before and after privatisation, identifying which costs in particular have been driven up. However, the restructuring of the industry at privatisation means that a comparison of cost categories between BR and its successor companies is far from straightforward and is not attempted in this paper.

Nevertheless, the scale of the increase in costs, even on conservative assumptions, implies that it cannot be due to the need of all the actors in the value chain to

[20] In the ORR blog, Glaister confirms that 'sooner or later, most of that debt will only ever be repaid out of taxation' adding that 'there is a great deal of public money at stake –some £100bn, if all the projects in plan or under way over the next twenty years are accounted for' (ORR, 2016).

generate a profit margin and the 'leakage' of dividends and interest payments. Rather, in the opinion of the authors, the cause is more likely to be found in the perverse decision to dismantle an industry that was historically vertically integrated for very good reasons, and the dysfunctionality of the resulting structure.

It is striking that NR has been criticised, e.g. by McNulty, for its lack of private sector incentives, i.e. the need to generate a return for shareholders, when the directors of its predecessor, Railtrack, were positively obsessed with the share price and dividend rates. Indeed, daily updates on the share price were posted on signal box noticeboards, and even after the Hatfield crash, when Railtrack reported a loss of £314m, the directors approved a dividend of £138m to reassure investors (Wolmar, 2005, p. 95; McCartney and Stittle, 2015, p. 116). Apparently, the choice is between Railtrack's 'neglect' of the infrastructure and NR's 'gold-plating' of the same.

The evidence and analysis presented in this paper strongly suggest that in cost terms alone, the dismantling of British Rail was ill-judged and has proved to be a major public policy error. Although BR was performing very well when compared to its European counterparts, proponents of privatisation argued that the private sector would improve efficiency and provide 'better value for money' over the 'dead hand' of the state. But this was largely an illusion, and indeed now, in a farcical twist that nobody could have foreseen, many of the franchises are actually run, not by private enterprise but by state-owned European rail operators – the very ones that BR was out-performing in the 1980s[21].

[21] As already noted, Shaoul (2006, p. 157) argues that dividends paid to private operators are extracted from the railways whereas interest payments made by BR to the government had been 'recycled back to the Department of Transport as owner and were, in principle at least, available to be spent on further railway expenditure'. Where the franchisee is a European state-owned railway, such as Deutsche Bahn, dividends are available for reinvestment in the railways – just not in Britain (Schneibel, 2011).

References

Atkins Consultancy (2011). Rail Value for Money Study, Whole-system Programme Management; Contract No RVFM10004, Issue 1.4, 25 May 2011.

Booth, P. (2006). Foreword. In P. Booth (Ed.), *The Railways, the Market and the Government* (pp. 13-15). London: Institute of Economic Affairs.

Bowman, A. (2015). An illusion of success: The consequences of British rail privatisation. *Accounting Forum*, 39(1), 51-63.

Bowman, A., Folkman, P., Froud, J., Johal, S., Law, J., Leaver, A., Moran, M., &Williams, K. (2013). *The Great Train Robbery: rail privatisation and after*. Manchester: Centre for Research on Socio-Cultural Change. http://www.cresc.ac.uk/sites/default/files/GTR%20Report%20final%205%20June%202013.pdf [accessed 3.7.2013].

British Rail (BR). *Annual reports and statements of accounts*. London: BR. (Various years from 1980/81 to 1995/96).

Butcher, L. (2015). Railway passenger franchises. *House of Commons Briefing Paper SN01343*. London: House of Commons Library.

Cole, B. & Cooper, C. (2006). Deskilling in the 21st century: The case of rail privatisation. *Critical Perspectives on Accounting*, 17(5), 601-625.

Competition and Markets Authority (CMA) (2016). Competition in passenger rail services in Great Britain:A policy document.. London: CMA. Available at: https://assets.publishing.service.gov.uk/media/56ddc41aed915d037600000d/Competition_in_passenger_rail_services_in_Great_Britain.pdf [Accessed: 15 June 2016]

Crompton, G., & Jupe, R. (2003a). A lot of friction at the interfaces. *Financial Accountability & Management*,19(4), 397-418.

Crompton, G., & Jupe, R. (2003b). “Such a silly scheme”: the privatisation of Britain’s railways 1992–2002. *Critical Perspectives on Accounting*, 14(6), 617-45.

Crompton, G., & Jupe, R. (2003c). 'Visions and Sea Changes': Nationalisation and Privatisation of Britain's Railways. Paper to Third Accounting History International Conference, Siena.

Crompton, G., & Jupe, R. (2007). Network Rail – forward or backward? Not-for-profit in British transport.*Business History*, 49(6), 908-28.

Curwen, P. (1997). The End of the Line for BR. *Public Money & Management*, 17 (4), 55–67.

Department for Transport (DfT) (2010). *The Future of Rail Franchising*. London: DfT.

Department for Transport (DfT) (2015). Public register of rail passenger franchise agreements. Available at https://www.gov.uk/government/collections/public-register-of-rail-passenger-franchise-agreements [Accessed 22 July 2015].

Department of Transport (DoT) (1992). *New opportunities for the railways* (Cmd2012). London: HMSO.

Department of Transport (DoT) (1993). *Railway privatisation: passenger rolling stock* (Consultation Document). London: DoT.

Domberger, S., & Jensen, P. (1997). Contracting out by the public sector: theory, evidence, prospects. *Oxford Review of Economic Policy*,13(4), 67-78.

Foster, C. (2003). The economics of rail privatisation. In P. Vass (Ed.), *The development of rail regulation. A collection of reviews* (pp. 1-31). University of Bath: Centre for the Study of Regulated Industries (first published as a discussion paper by CRI in 1994).

Gourvish, T. (2002). *British Rail 1974–97: from integration to privatisation*. Oxford: Oxford University Press.

Gourvish, T. (2008). Britain’s railways 1997–2005: Labour’s strategic experiment. Oxford: Oxford University Press.

Great North Eastern Railway Limited (GNER). (2006). Report and financial statements for the 52 weeks ended 7 January 2006. London: GNER.

Hansard. (2013). DfT Statement, 17 December 2013. Col. 94WS.

Harris, N., & Godward, E. (1997). *The privatisation of British Rail*. London: Railway Consultancy Press.

Jupe, R. (2006). A Fudge? Network Rail's Status in the Rail Industry. *Public Money & Management*, 26(3), 148-150.

Jupe, R. (2009). A "Fresh Start" or the "Worst of all Worlds"? A Critical Financial Analysis of the Performance and Regulation of Network Rail in Britain's Privatised Railway System.*Critical Perspectives on Accounting*, 20(2), 175-204.

Jupe, R. (2011). A poll tax on wheels: might the move to privatise rail in Britain have failed? *Business History*, 53(3), 324-343.

Jupe, R. (2012). Evolutionary change? An evaluation of the McNulty report on rail. *Public Money & Management*, 32(3), 177-184.

Jupe, R., & Crompton, G. (2006). "A deficient performance": the regulation of the train operating companies in Britain's privatised railway system. *Critical Perspectives on Accounting*, 17(8), 1035–65.

Jupe, R., & Funnell, W. (2015). Neoliberalism, consultants and the privatisation of public policy formulation: The case of Britain's rail industry. *Critical Perspectives on Accounting*,29, 65-85.

Lawrenson, D. M. (1992). Britain's Railways: The predominance of engineering over accountancy during the inter war period. *Critical Perspectives on Accounting*, 3(1), 45-60.

Joloza, T. (2013). Classification of Network Rail under European System of Accounts 2010. London: Office for National Statistics.

Lawlor, E. (2011). A Fare Return: Ensuring the UK's railways deliver true value for money. Brighton, UK: Just Economics.

Li, C., & Stittle, J. (2014). Privatisation and Franchising of British Train Operations. *Australian Accounting Review,* 24(1), 53-65.

McCartney, S., & Stittle, J. (2006). 'Not our problem': UK Government's fiscal obligations towards the privatised railway network. *Accounting Forum*, 30(2), 139-153.

McCartney, S., & Stittle, J. (2011). 'Carry on up the east coast' – a case study in railway franchising. *Public Money & Management*, 31(2), 123–130.

McCartney, S., & Stittle, J. (2012). 'Engines of Extravagance': The privatised British railway rolling stock industry. *Critical Perspectives on Accounting*,23(2), 153–167.

McCartney, S., & Stittle, J. (2013). 'Failing to deliver' - the privatized British rail freight industry. *Public Money & Management*, 33(5), 321-8.

McCartney, S., & Stittle, J. (2015). Accounting for Producer Needs: The case of Britain's rail infrastructure. *Accounting Forum*, 39(2), 109-120.

McNulty, R. (2011). *Realising the Potential of GB Rail: Final Independent Report of the Rail Value for Money Study*. London: DfT/ORR. On web at https://www.gov.uk/government/publications/realising-the-potential-of-gb-rail [Accessed 22 July 2015].

Modern Railways. Hard times just got harder. Editorial. 2016. August.

National Audit Office (NAO) (2014). Procuring new trains. Report by the Comptroller and Auditor General for the DfT, HC 531, session 2014-15. London: NAO.

National Audit Office (NAO) (2015). Reform of the rail franchising programme. HC 604, session 2015-16. London: NAO.

Newbery, D. (2006). Privatising5Network Industries. In M. Köthenbürger, H. Sinn, & J. Whalley (Eds.), *Privatization Experiences in the European Union* (pp. 3-49). London: MIT Press.

Network Rail (NR) (2014). *Annual Report and Accounts 2013/14*. London: Network Rail.

Network Rail Infrastructure Limited (NRIL) (2003). *Annual Report and Accounts 2002/03*. London: Network Rail.

Office of Rail Regulation (ORR). Review of the rolling stock market. An invitation to comment. London: ORR; 1998a.

Office of Rail Regulation (ORR) (2006). National rail trends year book 2005/06. London: ORR.

Office of Rail Regulation (ORR) (2010). International Cost Efficiency Benchmarking of Network Rail. London: ORR. Available at www.rail-reg.gov.uk/upload/pdf/econometric_update_2010_orr_benchmarking_report.pdf [Accessed 22 July 2015]

Office of Rail Regulation (ORR) (2012).*GB rail industry financial information 2010-11*. London: ORR.

Office of Rail Regulation (ORR) (2013). Periodic Review 2013: Final determination of Network Rail's outputs and funding for 2014-19. London: ORR.

Office of Rail Regulation (ORR) (2015a). *Revenue support grants - Total government support. Table 1.16*. London: ORR. Available at https://dataportal.orr.gov.uk [Accessed 15 August 2016].

Office of Rail Regulation (ORR) (2015b). *Network Rail Monitor*, June 2015. London: ORR.

Office of Rail Regulation (ORR) (2015c). Passenger/kms of franchised operators (Table 12.2); Passenger Journeys (Table 12.5); Passenger Revenue (Table 12.9); Passenger Train mileage (Table 12.15); Freight moved (Table 13.7). London: ORR. Available at https://dataportal.orr.gov.uk [Accessed 22 July 2015].

Office of Rail Regulation (ORR) (2016). Railway Funding and Financing: The System Works – Keep It. ORR Blog, 21 July 2016. Available at http://orr.gov.uk/news-and-media/orr-blog/railway-funding-and-financing-the-system-works-keep-it [Accessed 14 September 2016]

Parker, D. (2006). The United Kingdom's Privatisation Experiment: The Passage of Time Permits a Sober Assessment. In M. Köthenbürger, H. Sinn, & J. Whalley (Eds.), *Privatization Experiences in the European Union* (pp. 365-98). London: MIT Press.

Parker, D. (2012). The Official History of Privatisation. Vol. 2, Popular Capitalism, 1987-1997. London: Routledge.

Parker, D. (2013). The privatized railways: problems foreseen. *Public Money & Management*, 33(5), 313-319.

Pollitt, M., &Smith, A. (2002). The restructuring and privatisation of British rail: was it really that bad? *Fiscal Studies*, 23(4), 463–502.

Poole, F.& Dyer, A. (1999). Railway organisations. *House of Commons Research Paper 99/80*. London: House of Commons Library.

Preston, J. (1996). The Economics of British Rail Privatisation: An assessment. *Transport Reviews*,16(1), 1–21.

Preston, J. (1999). Competition in British Railways – What Have We Learned? *Paper to the Danish Transport Conference*, Aalborg.

Public Accounts Select Committee (PAC) (2011). Office of Rail Regulation: Regulating Network Rail's Efficiency, HC 1036, session 2010-12. London: The Stationery Office.

RMT (National Union of Rail, Maritime and Transport Workers). (2014). *Press Release, 13 October*. Available at http://www.rmt.org.uk/news/research-shows-three-quarters-of-uk-rail-now-foreign-owned/ [Accessed 22 July 2015].

Schneibel, G. (2011). Deutsche Bahn to Pay its First Ever Dividend, Deutsche Welle, 7 April 2011. Available at http://www.dw.com/en/deutsche-bahn-to-pay-its-first-ever-dividend/a-14971427 [Accessed 22 July 2015].

Shaoul, J. (2002). New Developments: A Financial Appraisal of the London Underground Public-Private Partnership. *Public Money & Management*, 22(2), 53-60.

Shaoul, J. (2004). Railpolitik: the financial realities of operating Britain's national railways. *Public Money & Management*, 24(1), 27–36.

Shaoul, J. (2006). The Cost of Operating Britain's Privatized Railways. *Public Money & Management*,26(3), 151-58.

Shaw, J. (2000). Designing a Method of Rail Privatisation. In R. Freeman, & J. Shaw (Eds.), *All change: British Railway Privatisation* (pp. 1-29). Maidenhead: McGraw-Hill.

Shires, J. D., Preston, J. M., Nash, C. A. & Wardman, M., (1997). Rail Privatisation: The Practice-An Analysis of Seven Case Studies, Working Paper 420. Leeds: Leeds University Institute for Transport Studies.

Taylor, I., & Sloman, L. (2012). *Rebuilding Rail - Final Report*. London: Transport for Quality of Life.

Transport Select Committee (TSC) (1995). *Fourth Report: Railway Finances; Vol II - Memoranda of Evidence*, HC 206 II, session 1994-95. London: HMSO.

Transport Select Committee (TSC) (2002). First Report: Passenger Rail Franchising and the Future of Railway Infrastructure; Vol II - Minutes of Evidence, HC 239-II, session 2001/02. London: The Stationery Office.

Transport Select Committee (TSC) (2004a). *Seventh Report: The Future of the Railway*, HC 145-1, session 2003-04. London: TSO.

Transport Select Committee (TSC) (2004b). *Seventh Report: The Future of the Railway, Minutes of Evidence*, HC 145-II, session 2003-04. London: TSO.

Transport Select Committee (TSC) (2006). *Fourteenth Report: Passenger rail franchising*, HC1354, session 2005-06. London: TSO.

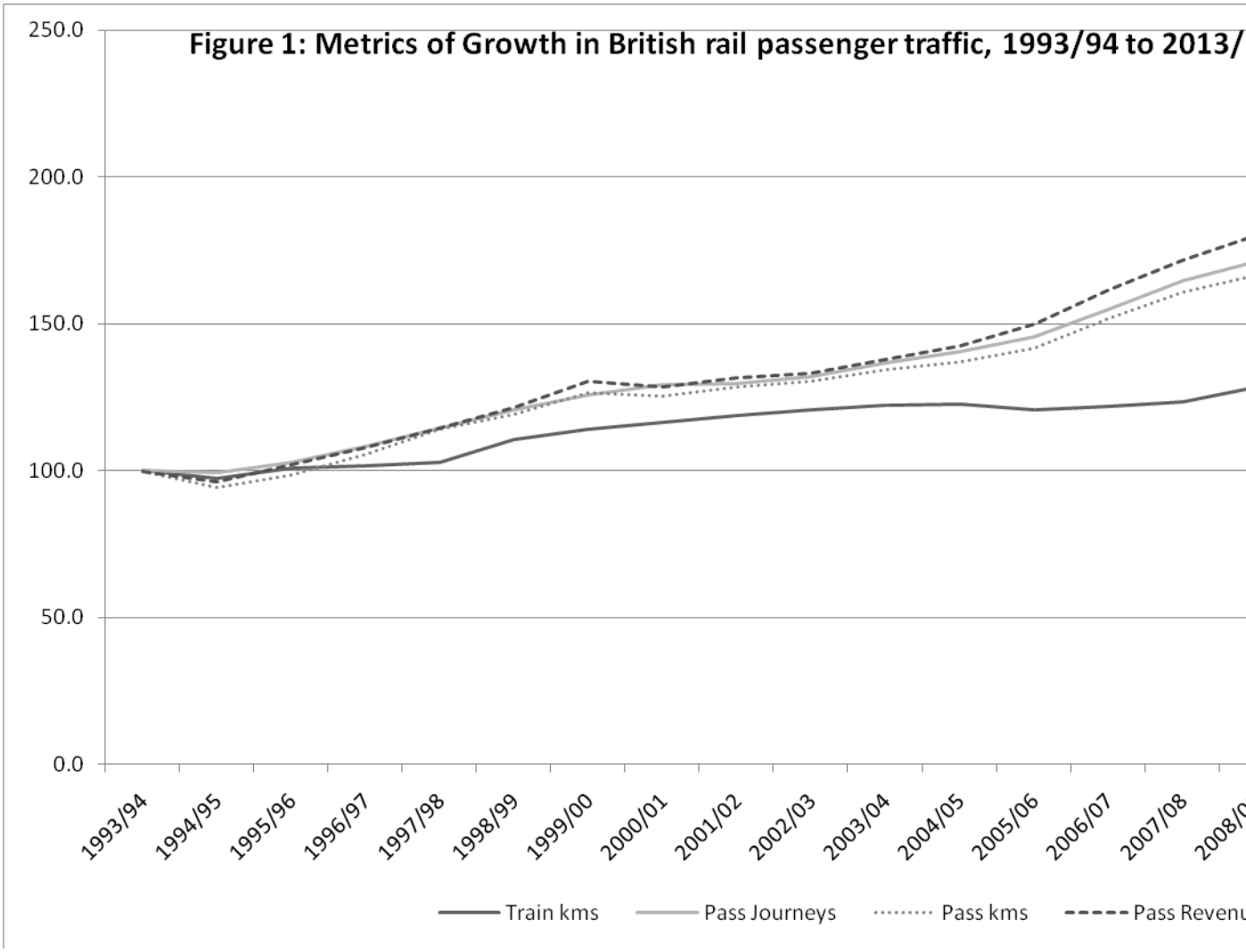
Transport Select Committee (TSC) (2009). *Eighth Report: Rail fares and franchises*, HC 233, session 2008–09. London: TSO.

Transport Select Committee (TSC) (2013). Seventh Report: Rail 2020, Vol. 1, HC 329-1, session 2012/13. London: TSO.

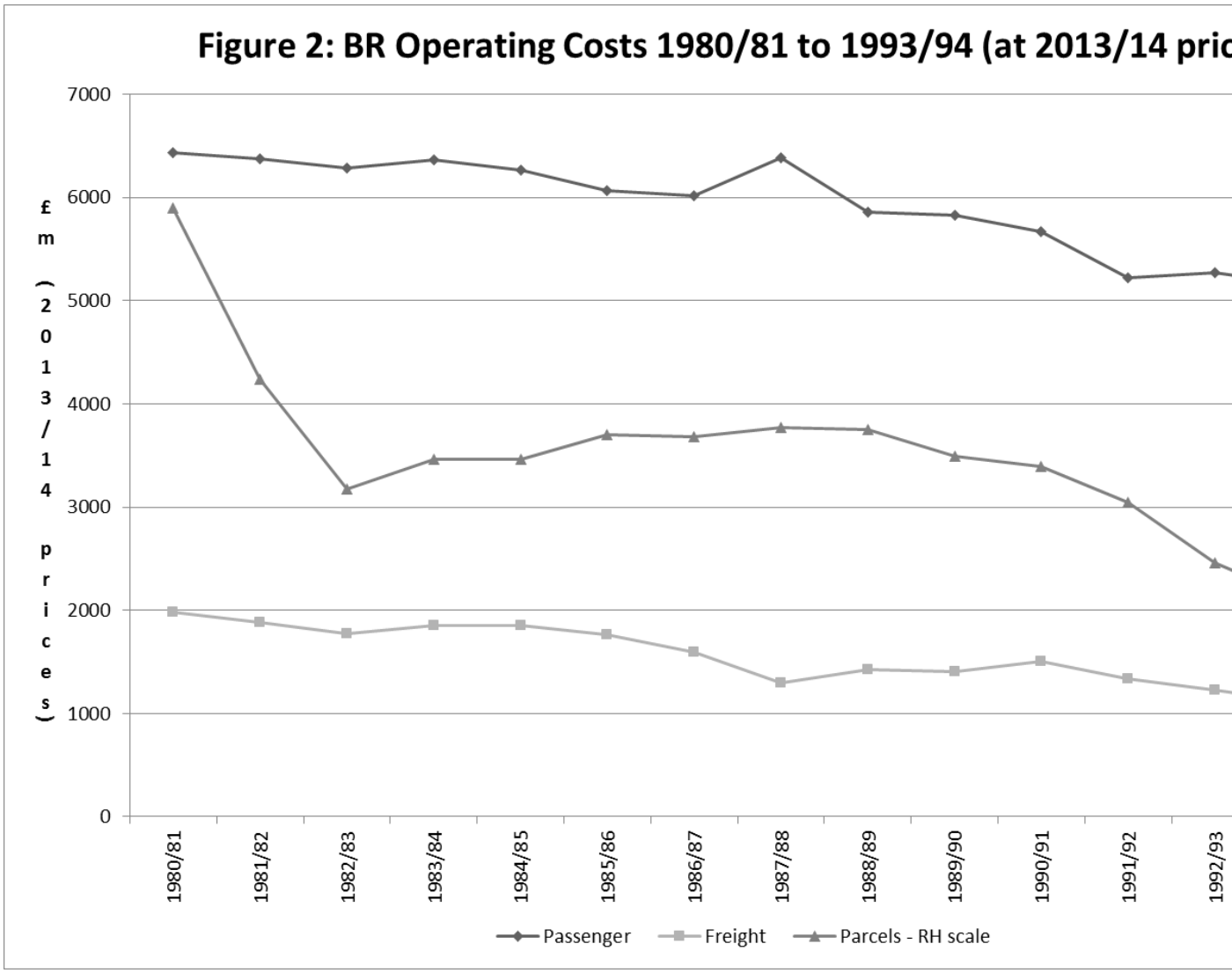
Tyrrall, D. (2003). The UK railway industry: a failed experiment in transaction cost economics. *European Business Journal*, 15(1), 38-48.

Williamson, O. (2005). The Economics of Governance. *American Economic Review*, 95(2), 1–18.

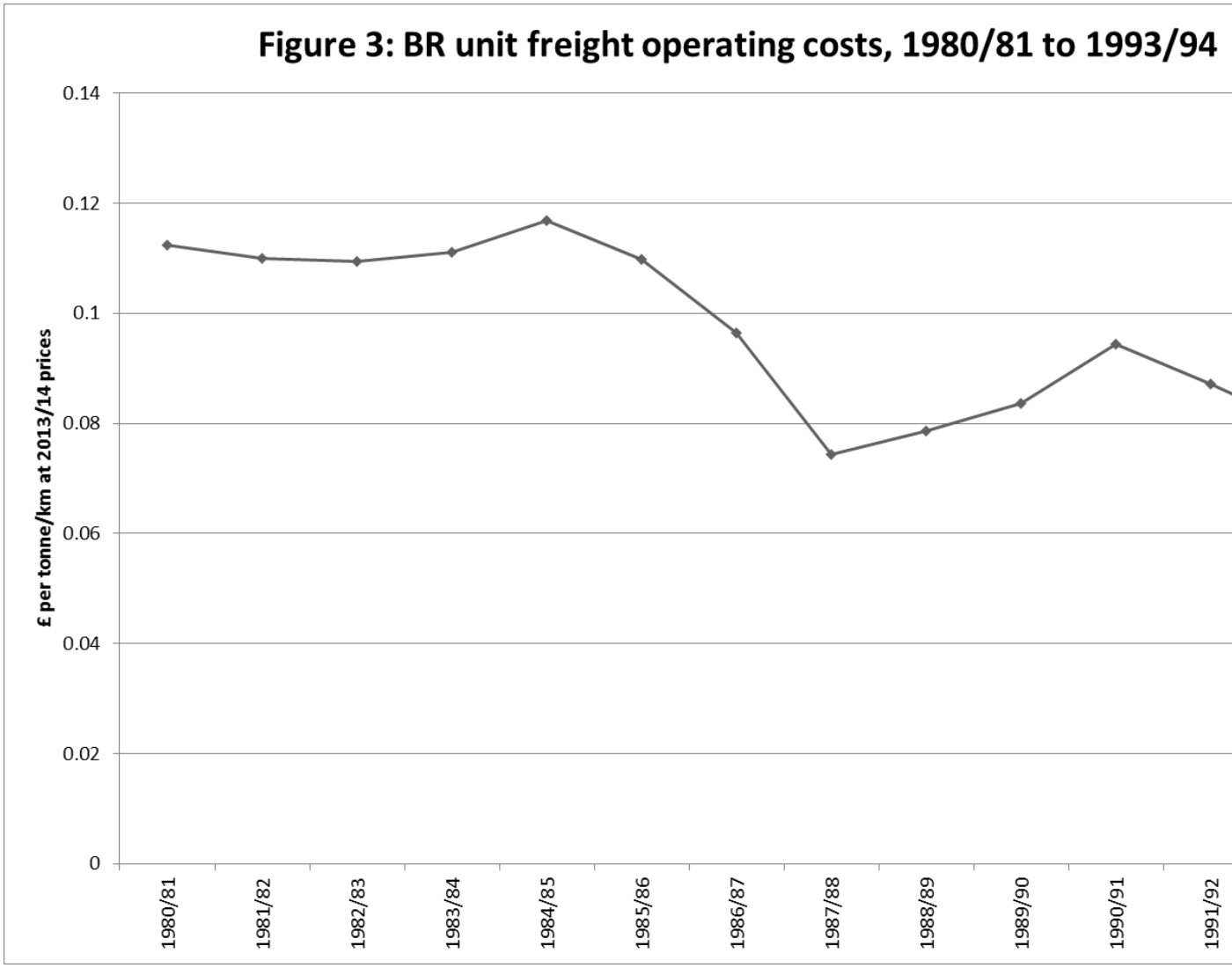
Wolmar C. (2005). On the wrong line: how ideology and incompetence wrecked Britain's railways. London: Aurum Press.



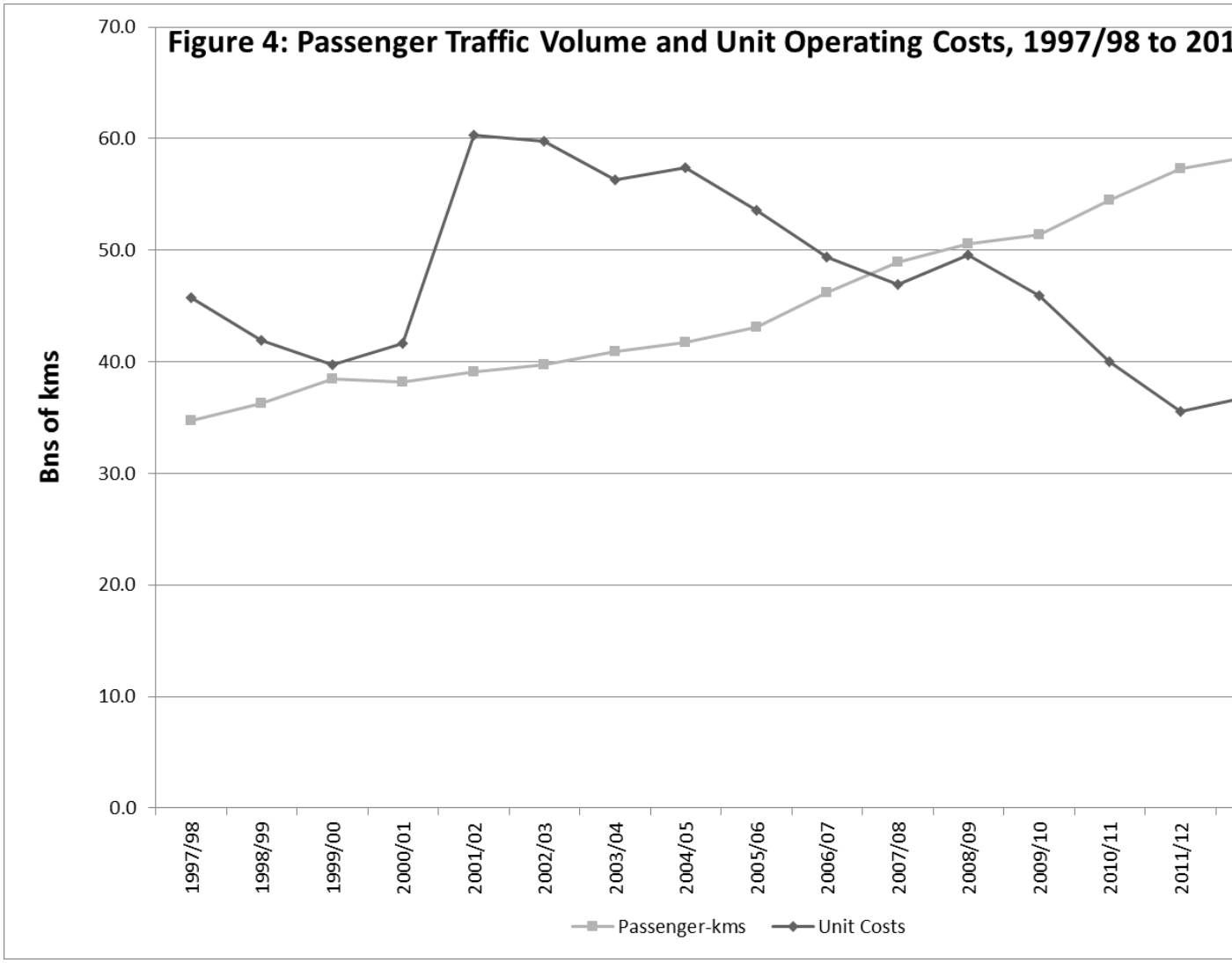
Sources: BR accounts; ORR (2006, Tab 1.3a, p. 17; Tab 1.4, p. 21); ORR (2015c).



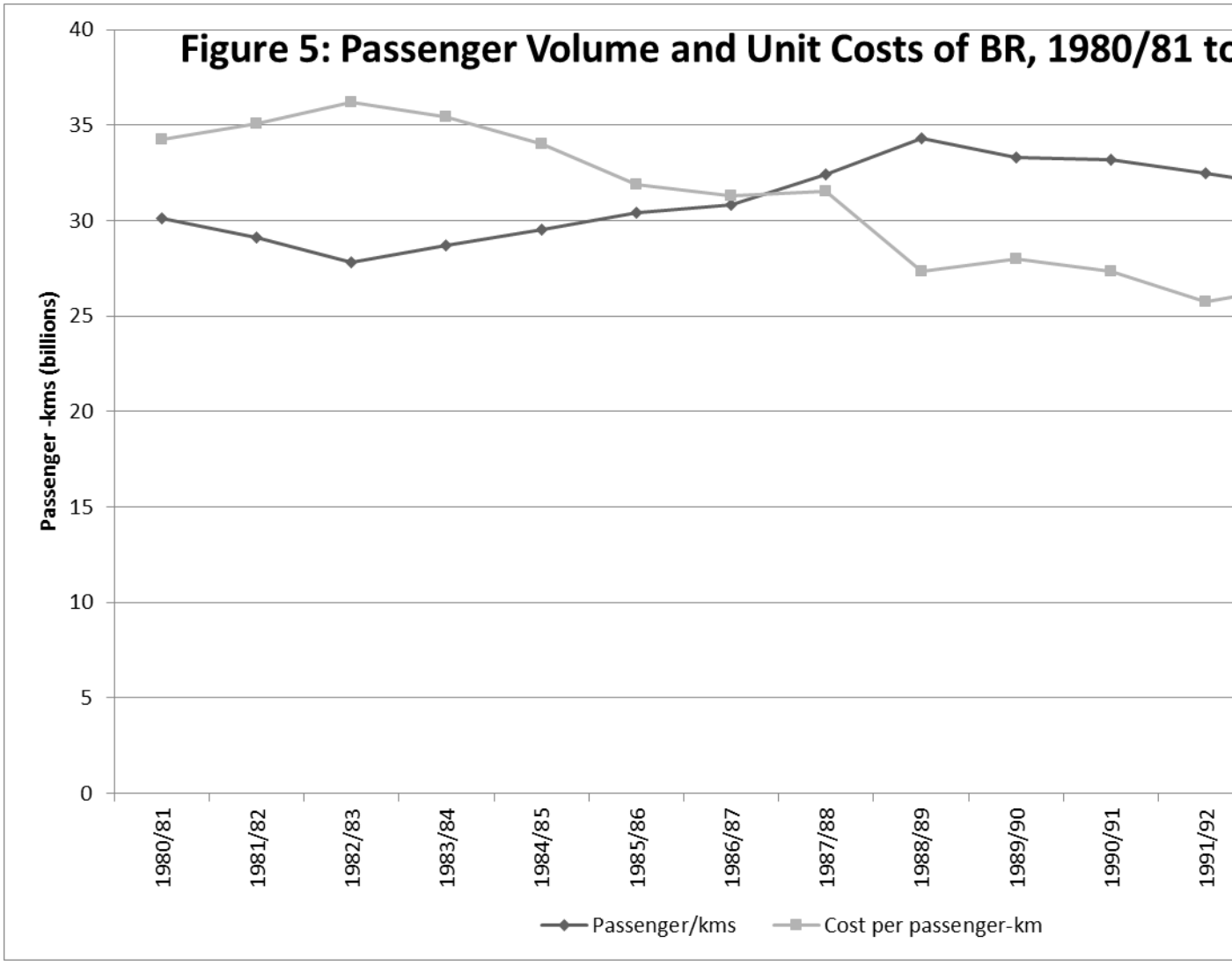
Sources: BR Annual Reports



Sources: Freight Operating Costs and traffic statistics from BR Annual Reports



Sources: Traffic and Operating Costs per Table 2



Sources: Passenger Volume per Fig. 1; Operating Costs per Table 3